



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,366	09/26/2003	Yoshihiro Ueno	2003_1231A	6879

513 7590 12/08/2005

WENDEROTH, LIND & PONACK, L.L.P.  
2033 K STREET N. W.  
SUITE 800  
WASHINGTON, DC 20006-1021

EXAMINER

WATKO, JULIE ANNE

ART UNIT PAPER NUMBER

2653

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/670,366

Applicant(s)

UENO ET AL

Examiner

Julie Anne Watko

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 33-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 33-36, 48-53, 55-60, 62 and 63 is/are rejected.
- 7) ☒ Claim(s) 37-47, 54 and 61 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>09/26/2003</u> .  | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
2. Applicant cannot rely upon the foreign priority papers to overcome any rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

### *Drawings*

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "11c" and "10" have both been used to designate a first bearing in Fig. 4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Art Unit: 2653

5. The disclosure is objected to because of the following informalities:

In ¶ 0070, the specification recites “a point of intersection between the rotational axis in the radial direction of the recording medium 12 of the support arm 2;” however, it is unclear with what said rotational axis intersects.

In ¶ 0113, the specification recites “center of a surface of the head slider 30 opposing medium 12 rotates about immovable point G from P1 in a steady state of being afloat to of P2 after displacement”. This limitation is misdescriptive of Fig. 6, which shows points P1 and P2 at a center of the slider, not at a center of the recited surface of said slider.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 33-36, 48-53, 55-60 and 62-63 are rejected under 35 U.S.C. 102(e) as being anticipated by Honda et al (US PAP No. 2004/0184193 A1).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37

Art Unit: 2653

CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Due to similarities in the recited limitations, the independent claims will be treated together.

As recited in claims 33, 55 and 62-63, Honda et al show an apparatus comprising: a head on a surface of a head slider 110 that is to oppose a recording medium 102; and a head support device including (i) a support arm 2, with said head 1 at one end of said support arm, (ii) an elastic member 4 near another end of said support arm; and (iii) a first base arm 11, wherein an end of said elastic member is fixed to said first base arm, and one of said support arm and said first base arm has a rotation supporting point (11a or 11b, for example), and wherein said head is spaced (see Fig. 4) from said rotation supporting point in a longitudinal direction of said support arm.

As recited in claims 62-63, Honda et al show a disk drive (see Fig. 32), comprising a rotational driving device for rotating a recording medium 102 having a recording medium layer formed on a surface thereof, and a driving device (including 105), with said head slider being at one end of said head support device and said driving device being at another end of said head support device.

As recited in claim 34, Honda et al show that said elastic member 24 is one-piece with said support arm 22 and positioned along a longitudinal center line of said support arm (see Figs. 21-22).

Art Unit: 2653

As recited in claim 35, Honda et al show a head slider on which said head is mounted, with said head slider being disposed at said one end of said support arm via a flexure 13.

As recited in claim 36, Honda et al show a balancer 62 at said another end of said support arm such that said rotation supporting point (see 60 in Fig. 14) is between said balancer and said head slider.

As recited in claim 48, Honda et al show that said elastic member is symmetrical with respect to a longitudinal center line of said support arm, and is defined by one of a U-shaped, V-shaped and J-shaped (see Figs. 21-22) through-hole in said support arm so as to be tongue-shaped.

As recited in claim 49, Honda et al show that said rotation supporting point includes two pivots (11a and 11b, for example).

As recited in claim 50, Honda et al show that a head slider 36 connected to said support arm via a flexure; and a balancer 62 on said support arm, wherein said head is mounted on said head slider such that an overall center of gravity, which is a composite of respective centers of gravity of said head slider, said flexure, said support arm, and said balancer, is positioned on a line that interconnects respective peaks of said two pivots ("balanced with respect to the projecting portion", see ¶ 0131).

As recited in claim 51, Honda et al show that said two pivots are symmetrical (see Fig. 2) with respect to a longitudinal center line of said support arm.

As recited in claim 52, Honda et al show a side reinforcement 26 at a longitudinal side of said support arm.

Art Unit: 2653

As recited in claim 53, Honda et al show that said side reinforcement is formed by bending a portion of said support arm (see ¶ 0116).

As recited in claim 56, Honda et al show that said elastic member is one-piece with said support arm and positioned along a longitudinal center line of said support arm (see Figs. 21-22).

As recited in claim 57, Honda et al show that said head slider is disposed at said one end of said support arm via a flexure 13.

As recited in claim 58, Honda et al show that said elastic member is symmetrical relative to a longitudinal center line of said support arm, and is defined by one of a U-shaped, V-shaped and J-shaped through-hole in said support arm so as to be tongue-shaped (see Figs. 21-22).

Regarding claim 59: See above for claim 49.

Regarding claim 60: See above for claim 52.

8. Claims 33, 35-36, 48-53, 55, 57-60 and 62-63 are rejected under 35 U.S.C. 102(b) as being anticipated by Berding (US Pat. No. 5936803).

Due to similarities in the recited limitations, the independent claims will be treated together.

As recited in claims 33, 55 and 62-63, Berding shows an apparatus comprising: a head 142 on a surface of a head slider (140, for example) that is to oppose a recording medium; and a head support device including (i) a support arm 520, with said head 540 at one end of said support arm, (ii) an elastic member 566 near another end of said support arm; and (iii) a first base arm 60, wherein an end of said elastic member is fixed to said first base arm (see Fig. 2), and one of said support arm and said first base arm has a rotation supporting point A, and

Art Unit: 2653

wherein said head is spaced from said rotation supporting point in a longitudinal direction of said support arm (see Fig. 2).

As recited in claims 62-63, Berding shows a disk drive (see Fig. 1), comprising a rotational driving device for rotating a recording medium 12 having a recording medium layer formed on a surface thereof, and a driving device (including 13), with said head slider being at one end of said head support device and said driving device being at another end of said head support device.

As recited in claim 35, Berding shows that a head slider 240 on which said head is mounted, with said head slider being disposed at said one end of said support arm 220 via a flexure 230.

As recited in claim 36, Berding shows a balancer 260 ("load beam balancing members or "wings" 260", see col. 7, lines 29-30) at said another end of said support arm such that said rotation supporting point is between said balancer and said head slider (see Fig. 6).

As recited in claim 48, Berding shows that said elastic member is symmetrical with respect to a longitudinal center line of said support arm, and is defined by one of a U-shaped, V-shaped and J-shaped (see Fig. 6) through-hole in said support arm so as to be tongue-shaped.

As recited in claim 49, Berding shows that said rotation supporting point includes two pivots (see Fig. 6).

As recited in claim 50, Berding shows a head slider 240 connected to said support arm via a flexure 230; and a balancer 260 on said support arm 220, wherein said head is mounted on said head slider such that an overall center of gravity, which is a composite of respective centers of gravity of said head slider, said flexure, said support arm, and said balancer, is positioned on a



Art Unit: 2653

line that interconnects respective peaks of said two pivots (see col. 3, line 64-col. 4, line 2; see also col. 4, lines 24-28).

As recited in claim 51, Berding shows that said two pivots are symmetrical (see Fig. 3; see also Fig. 6) with respect to a longitudinal center line of said support arm.

As recited in claim 52, Berding shows that a side reinforcement (125 or 225, for example) at a longitudinal side of said support arm.

The product by process limitations (e.g. “formed by bending” in claim 53) in these claims are directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessman*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process limitations or steps, which must be determined in a “product by process” claim, and not the patentability of the process limitations. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not. Note that the applicant has the burden of proof in such cases, as the above case law makes clear.

As recited in claim 57, Berding shows that said head slider is disposed at said one end of said support arm via a flexure 230.

As recited in claim 58, Honda et al show that said elastic member is symmetrical relative to a longitudinal center line of said support arm, and is defined by one of a U-shaped, V-shaped and J-shaped through-hole in said support arm so as to be tongue-shaped (see Fig. 6).

Art Unit: 2653

Regarding claim 59: See above for claim 49.

Regarding claim 60: See above for claim 52.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 34, 56, are rejected under 35 U.S.C. 103(a) as being unpatentable over Berding (US Pat. No. 5936803).

As recited in claims 34 and 56, Berding is silent regarding whether said elastic member is one-piece with said support arm and positioned along a longitudinal center line of said support arm.

There is no invention in relocating known parts when the functioning of the apparatus is not changed by the relocation. See *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to relocate the elastic member to the longitudinal center line. The rationale is as follows: one of ordinary skill in the art would have been motivated to reduce a moment of inertia as is notoriously well known in the art.

***Allowable Subject Matter***

12. Claims 37-47, 54 and 61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kawauchi et al (US PAP No. 2003/0072108 A1) show a head slider comprising various spring constants for positive pressure generators (see Fig. 14, for example).

Murphy et al (US Pat. No. 6304420 B1) show a head suspension for preventing a head from separating from a disc during external shock (see especially Figs. 8-10).

Freeman et al (US PAP No. 2002/0101796 A1) show an optical head suspension with a second voice coil motor positioning an objective lens generally along an arcuate path orthogonal to a surface of a disk (see Fig. 30, for example).

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 2653

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Anne Watko whose telephone number is (571) 272-7597. The examiner can normally be reached on Monday-Thursday until 4:45PM, and Friday until 6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Julie Anne Watko  
Primary Examiner  
Art Unit 2653

December 3, 2005  
JAW

A handwritten signature in black ink, appearing to read 'Julie Anne Watko', with a stylized flourish at the end.